

REMARKS

The Examiner rejected claims 1 – 6, 14, 16 – 18, and 24 under 35 U.S.C. §102(b) as anticipated by Freudberg et al. (U.S. Patent No. 4,696,031). Claim 1 claims a method of detecting ringback in a received signal and requires (emphasis added):

- a. calculating the energy of said received signal;
- b. calculating a threshold based on said energy in said received signal;
- c. determining whether ringback is present in said received signal by comparing said energy in said received signal to said threshold; and
- d. outputting a control signal indicating whether ringback is present in said received signal.

Freudberg describes a method and apparatus that detects ringback and other received signal types based on peak factor determinations. As shown in Figure 3, the apparatus of D2 includes a call progress analyzer 68 that applies received samples to two different paths – an energy path and a peak factor path. The energy path determines when a received signal is part of the received input samples. When a signal is present, as determined by the energy path, the peak factor path determines the signal type based on a normalized peak factor that is independent of the signal energy level (column 3, lines 4 – 5). Because Freudberg determines the signal type based on the peak factor, and not on the energy of the received signal, Freudberg cannot anticipate claim 1.

To further illustrate this point, Applicants note that Figure 3 and column 6, line 15 through column 7, line 19 of Freudberg measure the signal energy solely to determine when a signal is present in the received input samples. In particular, the energy path compares the measured signal energy to a selected threshold. When the measured signal level exceeds the selected threshold, time measurement logic 84 outputs “ON” to peak factor decision logic 92 to indicate that a signal is present in the received input samples. When the measured signal level drops below the selected threshold, time measurement logic 84 outputs “OFF” to peak factor

decision logic 92 to indicate that no signal is present. As such, the only purpose of the energy path is to identify to the peak factor decision logic when a signal is present in the received input samples.

During the ON intervals, the peak factor path determines the type of signal present. In particular, a measurement unit 88 in the peak factor path measures a peak factor associated with a measurement interval of the received input samples, i.e., 256 samples (column 7, lines 3 – 9). As indicated in column 7, lines 20 – 24, the peak factor is the “ratio of the absolute value of the largest sample in the measurement interval to the average of the magnitudes of the samples in the measurement interval.” For each measurement interval, peak factor range comparison unit 90 makes signal-type determinations, such as single-tone, double-tone, speech, etc., by comparing the measured peak factor to known ranges or thresholds (column 7, lines 24 – 45). Based on the signal-type determinations provided by comparison unit 90 over the measurement interval(s) associated with an ON interval, peak factor decision logic 92 determines the signal type. Based on these determinations, decision logic 86 outputs a call status signal to a computer.

In other words, Freudberg teaches using energy measurements solely to identify intervals of received input samples where signal is present (“ON” intervals). Freudberg uses peak factor measurements, which are simply related to the magnitude of the received input samples and are independent of the signal level, to identify the signal type during the ON intervals (see at least Figure 3, and column 5, line 39 through column 9, line 19).

Contrastingly, claim 1 detects ringback by calculating the received signal energy and comparing the calculated energy to a calculated threshold. As discussed above, Freudberg does not use the energy measurements to identify a type of signal or to identify a specific signal. Instead, Freudberg simply uses the energy measurements to identify when a signal is present in a received input samples. Further, because a detected signal in Freudberg may be any type of

signal, single-tone, double-tone, etc., simply detecting that a signal is present cannot constitute detecting a particular signal type, such as ringback.

In fact, as discussed above, Freudberg specifically includes the peak factor path, independent from the energy path, to determine the signal type. In particular, Freudberg analyzes peak factor measurements, which are independent of the signal energy levels, to determine a particular signal type, such as ringback. Because nothing in Freudberg uses the measured energy to specifically detect ringback, as required by claim 1, Freudberg cannot anticipate claim 1.

In addition to the above remarks, it is important to note that claim 1 also requires calculating a threshold based on the energy in the received signal. As discussed above, Freudberg selects a threshold instead of calculating a threshold. As discussed in column 6, lines 3 – 14, the comparison unit 82 selects either a low, intermediate, or high threshold based on specific circumstances associated with the received signal. For example, the comparison unit may change the threshold from the intermediate level to the low level after determining that a received signal is a ring (column 6, lines 6 – 10). Alternatively, the comparison unit may select the high level threshold if the energy measurement exceeds the high level. Regardless, Freudberg at best teaches selecting a threshold based in part on the energy measurement. As understood by those skilled in the art, calculating a threshold based on an energy measurement requires that the calculated threshold be a function of the energy measurement. Contrastingly, selecting a threshold based on an energy measurement does not require that the selected threshold be a function of the energy measurement. Therefore, calculating a threshold is wholly different from selecting a threshold. For at least this reason, Freudberg does not teach the threshold calculation limitation of claim 1.

For at least the above reasons, Freudberg does not anticipate independent claim 1. Further, because Freudberg does not anticipate independent claim 1, Freudberg cannot

anticipate any claims depending from claim 1. Therefore, claims 1 – 15 are novel in view of the cited art. Applicants respectfully request reconsideration.

The Examiner also asserted that Freudberg anticipates independent claims 16 and 24. Claim 16 requires, *inter alia*, a threshold calculator to calculate ringback threshold based on the calculated energy of a received signal, and a comparator to compare the calculated energy to the calculated threshold and to generate a control signal indicative of ringback based on the comparison. Claim 24 includes substantially similar limitations.

First, the Examiner asserts that comparator 82 compares the measured energy to a calculated threshold and generates a control signal, i.e., call status signal, indicative of ringback based on the comparison. However, as shown in Figure 3, progress analysis decision logic 86, not comparator 82, generates the call status signal. Claims 16 and 24 explicitly require that the comparator perform the comparison and generate the control signal. As such, Freudberg cannot anticipate claim 16 or claim 24.

Further, the Examiner asserts that comparator 82 of Freudberg calculates a ringback threshold. However, as discussed above, comparator 82 simply selects a signal threshold and compares the measured energy to the selected signal threshold to determine if signal is present in the received input. Nothing in Freudberg teaches a calculator that calculates a ringback threshold based on the measured energy. Because Freudberg does not teach this, Freudberg cannot anticipate claim 16 or claim 24.

For at least these reasons, independent claims 16 and 24, and dependent claims 17 – 18 and 25 – 31 are patentably distinct from Freudberg. Applicants respectfully request reconsideration.

The Examiner also rejected dependent claims 25 – 31 under 35 U.S.C. §103 as unpatentable over Freudberg and dependent claims 7 – 13 and 15 under §103 as unpatentable over Freudberg in view of Gupta (U.S. Patent No. 5,649,012). However, because the

corresponding independent claims are patentably distinct from the cited art, as discussed above, the §103 rejections of the dependent claims are moot.

Based on the above remarks, Applicants submit that claims 1 – 31 are patentably distinct from the cited art. As such, Applicants respectfully request the Examiner reconsider the rejections and allow the application to move forward to allowance. While the above remarks should address all of the issues of the current office action, should any issues remain, Applicant requests the Examiner call the undersigned so that any such issues may be expeditiously resolved.

Respectfully submitted,

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